

What is claimed is:

1. An automatic inspection and imaging electrophoresis device comprising:
  - a main housing with a tray receiving opening having at least two conductors in the tray receiving opening;
  - an electrophoresis tray for holding a sample, the electrophoresis tray having at least two electrodes situated so as to contact the at least two conductors when the electrophoresis tray is inserted into the tray receiving opening;
  - a sensor in the main housing for detecting movement of the sample in the electrophoresis tray;
  - a scanner in the main housing for obtaining an image of the sample in the electrophoresis tray;
  - a control device for controlling the operation of the electrophoresis device, and
  - a power supply for providing electricity to the electrophoresis device.
2. The automatic inspection and imaging electrophoresis device of claim 1, further comprising a storage device for storing data.
3. The automatic inspection and imaging electrophoresis device of claim 1, wherein the power supply is located inside the main housing.
4. The automatic inspection and imaging electrophoresis device of claim 1, wherein the power supply is external to the main housing.
5. The automatic inspection and imaging electrophoresis device of claim 1, further

comprising a light source in the main housing.

6. The automatic inspection and imaging electrophoresis device of claim 5, wherein the light source is an ultraviolet light or a visible light.

7. The automatic inspection and imaging electrophoresis device of claim 1, wherein the electrophoresis tray is transparent.

8. The automatic inspection and imaging electrophoresis device of claim 7, wherein if the sensor and scanner are located above the electrophoresis tray, the light source is located below the electrophoresis tray, and if the sensor and the scanner are located below the electrophoresis tray, the light source is located above the electrophoresis tray.

9. The automatic inspection and imaging electrophoresis device of claim 1, wherein the sensor comprises a photodiode or charge-coupled device (CCD).

10. The automatic inspection and imaging electrophoresis device of claim 1, further comprising:

an input interface for inputting operation data; and

a display for displaying status of components of the electrophoresis device.

11. The automatic inspection and imaging electrophoresis device of claim 1, wherein the control device comprises an external computer.

12. The automatic inspection and imaging electrophoresis device of claim 1, wherein

the control device comprises a portable electronic device.

13. The automatic inspection and imaging electrophoresis device of claim 12, wherein the portable electronic device comprises a personal digital assistant (PDA).

14. The automatic inspection and imaging electrophoresis device of claim 1, wherein the control device comprises a notebook computer.

15. The automatic inspection and imaging electrophoresis device of claim 1, further comprising an interface port for connecting an external device to the electrophoresis device.

16. An automatic inspection and imaging electrophoresis device comprising:

a main housing with a tray receiving opening having at least two conductors in the tray receiving opening;

an electrophoresis tray for holding a sample, the electrophoresis tray having at least two electrodes situated so as to contact the at least two conductors when the electrophoresis tray is inserted into the tray receiving opening;

a sensor in the main housing for detecting movement of the sample in the electrophoresis tray;

a scanner in the main housing for obtaining an image of the sample in the electrophoresis tray;

a control device for controlling the operation of the electrophoresis device; the control device comprising:

a keypad for inputting operation data; and

a display for displaying status of components of the electrophoresis device;

a power supply for providing electricity to the electrophoresis device;  
a storage device for storing data;  
a light source for supplying light; and  
an interface port for connecting an external device to the electrophoresis device.

17. The automatic inspection and imaging electrophoresis device of claim 16, wherein the light source comprises an ultraviolet light or a visible light.

18. The automatic inspection and imaging electrophoresis device of claim 16, wherein the electrophoresis tray is transparent.

19. The automatic inspection and imaging electrophoresis device of claim 16, wherein if the sensor and scanner are located above the electrophoresis tray, the light source is located below the electrophoresis tray, and if the sensor and the scanner are located below the electrophoresis tray, the light source is located above the electrophoresis tray.

20. The automatic inspection and imaging electrophoresis device of claim 16, wherein the sensor comprises a photodiode or charge-coupled device (CCD).

21. The automatic inspection and imaging electrophoresis device of claim 16, wherein the control device comprises an external compute, a portable electronic device, a personal digital assistant, or a notebook computer.